SUPPLEMENT.

je Kining Voumal,

FORMING A COMPLETE RECORD OF THE PROCEEDINGS OF ALL PUBLIC COMPANIES.

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THE CONSETT IRON WORKS.

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Consett Iron Works are situated 14 miles south-west of Newto which there is communication by the Blaydon and Consett y, and 14 miles from the classic region of Durham, to which a communication by an extension of the same railway by way chester. The works have been in operation 24 years. The on was chosen, in the first instance, as being advantageous for lyof both ironstone and coal, as well as limestone. As regards ne, this advantage no longer exists, the supply is now got from parts, principally from Cleveland and the hematite mines of rland. Notwithstanding this drawback, the Consett Works, he formation of the present company, in 1853, have been rehly prosperous. Mr. John Henderson, M.P. for Durham, Chairman of this company, Mr. Thomas Spencer vice-chairfr. David Dale is managing director, and Mr. Wm. Jenkins Imanager. Employment is given to about 5000 persons. The shares of 71. 10s are now quoted 31. 12s. 6d. premium. The are being still extended, in anticipation of increased trade. Bullishment at Consett proper consists of blast-furnaces, forges, mills, workshops, and offices. There are three blast-furnaces in; two more are in course of erection. The height of those in is 55 ft.; they are plated outside; eight cast-iron columns the body of each. Their diameter at the bodyes varies from 2½ ft. The make of pig-iron in each averages 450 tons per The top of each furnace is closed, on the cup and cone mend the gases are withdrawn for heating the whole of the stoves idered, no coal being used for these purposes. A chimney 250 ft. that and 22 ft. Inside diameter at the base, decreasing in size to-

2) ft. The make of pig-iron in each averages 450 tons per The top of each furnace is closed, on the cup and cone mend the gases are withdrawn for heating the whole of the stoves illers, no coal being used for these purposes. A chimney 250 ft. ht and 22 ft. inside diameter at the base, decreasing in size to-he top, is the medium for withdrawing the gases from the se, and will serve for those which will afterwards come into on. The stoves used at No. 3 furnace are of cast-iron; there erected. The principle of this stove is a combustion-chamber There are 18 double pipes, in six rows, in each stove. The round, 8 in. in diameter, and 17 ft. in length. The blast st wo pipes at once, and through 18 lengths before it makes at the delivery valve. The blast at Nos. 4 and 5 furnaces is by the Whitwell brick stoves. These have been so frequently ed that it is unnecessary to give any detailed account of them. seem, after eighteen months' experience of their working, to happroved of, and others are intended to be added to these in course of erection. There are four of the brick stoves furnace, placed equidistant and near the furnace; the diagle each is 22 ft. internally, and the height outside is from 25 ft.—these stoves are plated outside. There are twelve 9-inch and eleven 7-inch brick partitions in each, for the passage up wn of ignited gas for a period of two hours, the blast being by contact with the brickwork in those passages during the o hours, and so on alternately. The blast is heated from 300° at the commencement to 1100° at the end of each e period of two hours. The bricks for the construction stoves are made at the Consett Company's works, and and well adapted for the intense heat generated in them ion of the gas. The blast is conveyed to the tuyere pipes furnace by a wrought-iron circular main, 2 feet 9 inches in r. This is lined with 9-inch brickwork, reducing the size into 15 in. There are five tuyeres to each furnace, equi-disa working independently. The beam of each is supnace in action until lately, only o

tength, 43 it. in diameter.

ers, which cross continuously over the six boilers, having diate pillars of support, resting on stone foundations; each suspended from the girders by three straps at five points; sure of steam is from 40 to 45 lbs.; these boilers are covered od shed. There are eight plain boilers connected to the two first described; these are made 35 ft. only in length, 41 ft. eter, to avoid the great strain to which the long boilers are The 35-ft. boilers are suspended from girders in a similar to the others, and are covered over with brickwork. to the others, and are covered over with brickwork.

roduce of pig-iron in these three furnaces and two others at Hall is at present about 2000 tons per week. The two new es are designed to be of similar capacity and producing powers e now in operation at Consett, and to be furnished with the ell brick stoves, and all improvements for economising labour dueing the cost of production. Two blowing-engines are into be built in line with the others to meet the requirements extensions.

ne and limestone are tipped from the trucks on elevated constone and limestone are tipped from the trucks on elevative 10 ft, below the level of the charging-plate of the furnaces: e ovens are built on the same ground for the supply of coke: a terials are all conveyed by means of an inclined plane and tal steam-engine to the top of the three furnaces, g-iron produced at Consett and Crook Hall furnaces is almost manufactured at the forces and mills erected contiguous to

g-iron produced at Consett and Crook Hall furnaces is almost manufactured at the forges and mills erected contiguous to t-furnaces at Consett; 150 puddling-furnaces are erected. am-hammers are at work operating upon the puddled balls. The two forge engines; one of these drives two pairs of pudlls on each side of it; the other drives three pairs of pudlls on each side of it. There are five rolling-mills; at one rails are manufactured, having all the requisite appliances

in connection with it for sawing, punching, and straightening. The other four mills are exclusively for rolling ship-plates, the Consett iron is specially adapted to this purpose, for the manufacture of which of various sizes and qualities these mills are constantly in action on week days and night; with one exception each engine drives but one mill. One of the plate-mills is on the reversing principle, the rolls are reversed by a clutch fitting into crabs attached to cog-wheels on either side, which wheels revolve in opposite directions. Four powerful shears are erected 7 to 8 ft. wide for cutting the plates, with a separate engine to each.

The product of the plate-mills is very large; 1200 tons per week of ship-plates have been turned out of these mills; at present about 700 tons per week are made. This, we believe, is the largest output of plates at any works in this country, probably the largest in the world. Of rails, Consett works has supplied, and is supplying, some of the largest English railways, and large quantities are also shipped for Russia and America. The make of rails is about 700 tons per week, thus giving a total product of 1400 tons of finished iron per week.

Most of the steam-boilers for the forge and mill engines are heated

thus giving a total product of 1400 tons of finished iron per week. Most of the steam-boilers for the forge and mill engiues are heated by the waste heat from the pud-lling and mill furnaces. The boilers are placed horizontally, have double tubes and two iron chimneys attached. The shell is exposed externally. Each boiler is supplied with heat from two adjoining furnaces. A few boilers are heated with small coal, and a few furnaces have their own stack. The Crook Hall blast-furnaces are situated about 1½ mile east of the Consett Works. Seven furnaces were erected at the same time as those at Consett, 45 ft, in height; only two of these are at present in operation. The manufacture of pig-iron is intended to be concentrated at the Consett establishment, and the working of these furnaces discontinued. Four blast-furnaces erected at Bradley, subse-

naces discontinued. Four blast-furnaces erected at Bradley, subsequently to those at Crook Hall, and of the same type, are now being taken down.

quently to those at Crook Hall, and of the same type, are now being taken down.

The mineral property leased by the Consett Iron Company is both extensive and valuable. Mr. E. F. Boyd, the President of the Northern Mining Institute, is the consulting mining engineer for the company. There are seven plants at which coal is raised. The coal is all of the bituminous coking quality, obtained from the lowest series of coals in the coal measures, from the Busty Bank and other seams. The output of coal is about 12,000 tons per week. Part of the coal is sold for gas purposes; a large quantity of coal is taken to the forges and mills. There are 560 coke-ovens at Consett and at other places, nearly all of which are in operation. The coke produced from these supplies the blast-furnaces solely with fuel, and a large quantity of coke is sent away for sale. It is supplied to the principal Northern railways for locomotives, to the hematite furnaces in Cumberland and Lancashire, also to some of the Cleveland furnaces and exported to foreign parts. The coke is very pure, containing but a small percentage of sulphur and ash, and is well adapted for making high-class pig-iron.

To convey materials about the works and at the different pits 10 locomotive tank-engines are in use. The workshops comprise smiths',

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To convey materials about the works and at the different pits 10 locomotive tank-engines are in use. The workshops comprise smiths', joiners', and wagon shops, also roll-turning, fitting, and machine shops, together with a large foundry, to meet the requirements of a concern so extensive as that we have briefly described. The fire-brick works of this company are capable of making 60,000 fire-bricks per week.

The Consett Iron Company are not inattentive to the moral and the social well being of their workmen. Nearly all the school buildings have been built by the company, these are dispersed at convenient distances, and not less than 1500 children are educated in the various schools at and about Consett. They are all self-supporting, subsidised by Government grants, but there is still a great lack of desire on the part of the ironworkers and pitmen to send their children to school, and hundreds are not educated at all. The Protestants, Dissenters, and Roman Catholics possess well built, and in many cases handsome churches and chapels; the latter section form the bulk of the population—they have provided their own school buildings. Two buildings are set apart as reading-rooms, provided together with lights and fuel by the company. Numerous papers, books, and periodicals are subscribed for by the younger portion principally of the workmen. Other means of recreation are also provided in connection with these institutions.

The wages at Consett are all paid in coin, an advance on account being paid one week, and fortnightly settlements. There is no truck system in any form. A co-operative store is established and managed by the workmen, the sales at which last year were 16,000t. The company possesses 1500 workmen's cottages at various points on their property. A staff of five surgeons is provided. The company provide the surgery, buildings, and lighting, and also an infirmary for workmen injured in the works or pits, the cost being defrayed by the company. The men contribute the whole of the cost of these surgeons.

NOTES ON CONTINENTAL MINING-No. V.

MINERS IN BELGIUM .- In describing the coal fields and collieries it has been impossible to avoid incidental reference to the colliers, their manners and wages. But below these surface questions lie the habits and economy of their social life, worthy our consideration to habits and economy of their social life, worthy our consideration to copy or avoid. From the figures already quoted it is seen that the average wages for the 120,000 colliers, and for the iron-making workmen throughout the kingdom, is 34 frs. per day, or 912 frs. per annum, while the average of all employed in and about the collieries and works, including women and children, is 708 frs. per annum, or 2½ frs. per working day. In the case of the colliers, various contributions out of this have to be paid, amounting 16:48 frs. per annum, about 2 per cent. of their carnings. about 2 per cent, of their earnings.

To provide against accidents and sickness, two distinct arrange

To provide against accidents and sickness, two distinct arrangements are in operation. The first, called Cuiscs de Prevoyance, is a sort of national club, or sick and accidental assurance company. Membership is not compulsory, but so widely are its benefits admitted and acknowledged that 91 per cent. of the miners are contributors. The annual subscription is 5 frs. each. The second organisation, known as Caisses de Secours, is of the same nature, but temporary in its action, and in general one such society or club is attached to each college of the same nature. pit. The amount paid by each coalworker is 11.48 frs. per annum, making a total for provident purposes of 16.48 frs. From these facts we may infer that, so far as assistance in sickness or accident goes, we may infer that, so far as assistance in sickness or account to the Belgian arrangements are, on the whole, satisfactory.

But let us look to their normal, every day life and habits. To see the men as they really are we must leave towns and see them in villages, especially those inhabited solely by a mining population. At

work they seem tolerably lively and cheerful, but not loquacious, and compared to the average English workman take but a moderate interest in the progress of the work upon which they are engaged. But let us look at them on famille, when the hours of labour are over, and natural bent exercises unlimited sway. A slight repast, in which some maigre is the principal dish, regales them after the toils of the day, and then the aged and weary lounge on the floors of brick or mud, or recline at full length near the door-step, gazing vacantly at the athletics of the young and vigorous, who occupy the principal street or lane of the village with games of pitch and toss, races, ball, and the like; while the more juvenile portion of the community repeat the same exercises an octave higher, or resert to that most street or lane of the village with games of pitch and toss, races, ball, and the like; while the more juvenile portion of the community repeat the same exercises an octave higher, or resort to that most universal of urchin accomplishments, making dirt pies in the gutter. Most of these mining villages were entirely innocent of any means, and apparently of any desire, for mental improvement. Ten hours is the customary day, and in one large colliery we found the hours of labour were from 3 A.M. to 3 P.M., at which hour the night turn commenced. The men do not come up to the day for dinner, but have facilities down the pit for baving hot dinners. In most collieries no pit beer is allowed. On Sundays the miner generally gets into better feather, and goes to early mass; and in the after part of the day takes his family into the fields to enjoy the beauties of nature; but it is observed that the walk generally leads round by the inevitable coal pit. This same disposition may often be noticed when a workman with little mental ability is treated to a holiday; he is pretty sure to stroll round by his accustomed works to watch the progress of what are probably the only operations he understands; and his happiness is complete if wife or friend be there to whom he can describe and explain. Animal food is seldom indulged in more than once or twice in the week, and there seems amongst these workmen no representative of that feeling of independence with which the English collier, stricken into cash by the receipt of his week or fortnight's wages, strolls off to his symbol of all that is jolly—the Saturday night market.

One marked difference forces itself on the attention: that is, the day night market.

day night market.

One marked difference forces itself on the attention; that is, the much less important role, in the programme of the Belgian worker, played by the estaminet than is occupied by the public-house with the English collier. Drunkenness, though by no means common, is not rare; but the light character of the beer, as compared with English ales, is another safeguard to Belgian sobriety. The absence of beggars in the towns and villages seems at first sight to indicate an executional state of industrial prosperity, but it is simply due to the

lish ales, is another safeguard to Belgian sobriety. The absence of beggars in the towns and villages seems at first sight to indicate an exceptional state of industrial prosperity, but it is simply due to the fact that the arrangement of many English townships, of not allowing vagrants, is in Belgium a national law. Beggars are directly amenable to the local police, and are summarily disposed of in one of two classes. If unable to work through infirmity or sickness, and having no other means of support, they are moved to Union houses provided by the State. If able to work, and chiefly afflicted with idleness, they are dsafted off to the newly-formed work-colony at Hoogstraeten, where various incitives to industry are applied, much in the fashion of a dilute penal servitude.

Many coal firms are taking active steps to improve the sanitary and material condition of their miners, by building cottages according to approved models, and in some instances by making arrangements whereby sums of money are advanced to the workmen at low rates of interest, seldom exceeding 3½ or 4 per cent., to enable them to erect cottages for themselves. This plan is said to work well, but it is evidently only applicable under peculiar conditions of permanency. It is a common subject of remark in the coal districts, that the efforts of capitalists to build better houses for the colliers are only successful when the buildings take the form of isolated cottages, with a patch of garden, be it ever so small, in which the miner can feel some degree of independence, a kind of engineering and monarchial right to arrange things according to his own taste. The miner seems to have an innate horror of living in one of a row of straight, trim houses.

The condition of the Belgian ironworkers is in advance of that of

trim houses. The condition of the Belgian ironworkers is in advance of that of the colliers, and compares favourably with the characteristics of the ironworkers of South Staffordshire, as reported in a paper read before the British Association in 1866, by Mr. J. Jones, F.G.S. Speakfore the British Association in 1866, by Mr. J. Jones, F.G.S. Speaking of the forgemen of the Black Country, he says—"The nature of the employment induces a generally rude external appearance, and the strain upon the physical energies leads them, as a rule, to live expensively, and to drink excessive quantities of stimulants. They are singularly improvident as a class, and though they obtain good wages, they have a remarkable genius for spending all they earn, while they devote but little attention to their home comforts. They are vivacious pleasure-seekers, and hence Saint Monday is observed as a general district holiday."

There is a remarkable absence in the Belgian districts of what is so commonly to be seen in the Midland coal field of our country—the spectacle of two or three working miners, with little or no capital, joining together to work a few acres of broken mines, and jeopardising the lives of men by the use of winding-gear and other tackle of the most rude and primitive description. In Belgium a useful regulation enacts that no mining operations shall be commenced until the probable existence of the mineral to be won is proved to the satis-

the probable existence of the mineral to be won is proved to the satisfaction of the "Conseil des Mines." The right of minerals is assumed to rest with the Government, and, accordingly, each mine owner has to pay royalty, which is comprised under two heads—first, the redevance fixe, an amount of 10 centimes per hectare per annum, or about 1d. for each 21 acres; the second kind, called redecance proportionelle, averages 21 per cent, of the net produce. Both these taxes go into the National Treasury, and form a considerable item of State income. The Government exercises a vigilant control over the mining interests, by means of eight inspectors, under the direction of the "Inspecteur-en-chef des Mines," at present Mons. F. Jochams. From interviews with most of these gentlemen, both in the office and in the field, we formed the opinion that they were patient and courteous, and as officials accurately informed and thoroughly hard working. Beyond the payments to Government, except in the rare case where the owner of the land works the mine, there is a further tax payable to the required of the land works the mine, there is a further tax payable to the proprietor of the land, also divided, in imitation of the national tax, into two kinds:—1, a fixed reutal, generally 1 franc per hectare; 2, proportionate royally, varying from 1 to 3 per cent. on the net produce, according to the locality, and other conditions of

From these considerations it is evident that the conditions of Belgian mining are more favourable to the establishment of large firms. Accordingly, we find there some of the largest mining and manufac-

turing companies in the world. The extensive works of Sir John Co-kerill and Co., Serang, we have already noticed. At Moresner near Aix-la-Chapelle, are the head quarters of La Vieille Montagne near Aix-la-Chapelle, are the head quarters of La Vieille Montague. This famous company has a tract of rich mine land between Aix and Liége of several square miles in extent. The whole district, dotted with smelting and other works, and pierced with pit shafts, presents a scene of industry and organisation on a gigantic scale. Zinc and lead are mined, dressed, smelted, purified, rolled, alloyed, and manufactured on the spot. Upwards of 6000 workpeople are employed, and the annual amount of 3,638,900 frs. is raid in wages; which gives an average for all class of workers of 606 frs. each. Though this is an average for all class of workers of 606 frs. each. Though this is less by 100 frs. than the average of mine workers, yet this apparent discrepancy is more than counterbalanced by the lower price of provisions to the workpeople, the free education provided by the company, and by various other aids of a like nature. They have their own shops, manufactories, banks, villages, schools, churches, assurance societies, choral unions, festivals; in short, they form a miniature oligarchy, where the senators are the directors, with M. Max Braun, the managing director, at their head. The company is devoted thoroughly to the interests and prosperity of its workpeople; and in this, as well as in many other respects, this company is a model of a well-conducted, kindly, enterprising joint-stock association; and the directors justly pride themselves on possessing the best-developed organisation, and most prosperous operatives, of any company in the world. The paid-up capital of this company is not large, considering the enormous extent of their possessions—viz., company in the world. The paid-up capital of this company is not large, considering the enormous extent of their possessions—viz. 9,000,000 francs = 360,000L; while the annual profit paid in dividends, according to Mr. Barron's report, 1862, amounts to the handsome sum of 2,250,000 francs, or 25 per cent. The mining operations around Moresnet comprise both open works and shaft sinkings The ore of zinc, the chief mineral sought, occurs neither in metallic veins nor in stratified deposits, but is diffused generally through the rock stuff, with more or less of profusion in different parts, and can only be described as a peculiar condition of the Devonian beds, where certain constituents of the sandy strata are replaced by the ores of zinc or lead. Where the ore occurs tolerably near the surface it is got by open work. This quarry bears a striking resemblence to an English and pit in the colour of the rock, the busy hive face it is got by open work. This quarry bears a striking resemblance to an English sand pit, in the colour of the rock, the busy hive of men shovelling the earth into barrows and trucks, and in the inclined plane, up which are drawn wagons of ore to be sent to the dressing-floors

This company also possesses numerous concessions of mine land in various parts of the world, from most of which the ore is brought to the Belgian estate to be smelted along with the home produce. us parts of the

REMARKS ON IRON WORKS-ENGLISH AND FOREIGN.

SIR.—We have heard much of late of comparisons between the English and Belgian iron works, generally to the disadvantage of the English. The superiority of the machinery in connection with the Belgian iron works is brought prominently forward. This, together with the exercise of rigid economy in the manufacture of iron, is stated to be one cause for this superiority. I am inclined to think, however, that the causes which operate chiefly in enabling them to make iron at 1/2, per ton cheaper than can be done in the favoured districts. Forelease the large of the research of the control of the contro favoured districts of England are the low cost of wages and of the ironatone used. There may be an advantage in giving full play to engineering skill in providing machinery for economising labour, but the materials to be manufactured in this country are very various, requiring corresponding changes and multiplication of ma-chinery, and any reduction of cost could not well be sustained on that head. There are other points in the management of the Bel-gian works which may well be followed in English works, concerning the health and comfort of the workmen, which would tend to make them more contented, and less apt to run into ruinous strikes and competition with their employers. In the Belgian works, the boilers are removed to some distance from the furnaces, the engine cylinders are elevated, the places are kept cool with frequent appli-cations of cold water, and whitewash is applied to give an appear-ance of cleanliness. We think decidedly the iron works of England cations of cold water, and whitewash is applied to give an appearance of cleanliness. We think decidedly the iron works of England and Wales might be kept more orderly, application of cold water would keep them cooler, the boilers should be carefully covered to prevent the radiation of heat, and to economise fuel, and removed as far from the workmen as possible. The engine cylinders should be treated in the same way, and both economy of fuel and comfort would be the result. Attention to these matters would bring about a better feeling between employers and their workmen. C. V. July 26.

JOINT-STOCK COMPANIES, AND THE MANUFACTURE OF IRON IN SOUTH WALES.

SIR,-Probably some correspondent who has made the rise and progress of the iron trade, and its influences upon those who toil in it, some part of his study and attention might be induced to state his opinion as to how the various workpeople in this branch of trade have been effected physically, socially, and morally by the introduction of the joint-stock system, and further to inform us whether the toilers were not happier and more contented under the sole guidance and direction of a single individual as their head than under the agents of joint-stock companies, and whether such com panies, so far as regards iron manufacture and general management, have afforded the same facilities for human happiness and human progress as was afforded by individual employers to their various workpeople

Since such a vast demand has originated for rail iron, a number of joint-stock companies have from time to time been established, commanding a vast amount of capital, but in following up the career of many of them we have some very melancholy and striking pictures presented respecting their total want of capacity and general knowledge as to how either to husband their capital or the material that has to be operated upon. Year after year the same unfortunate details are brought before the public notice, clearly demonstrating the want of competence and practical knowledge on the part of the management as carried on at the suggestion of the directors of these companies. Nor, indeed, are instances of such deplorable want of method few or far between; for to my knowledge, during the last thirty years, South Wales, so far as regards joint stock companies in connection with the manufacture of iron. has been the place where untold wealth has been lost through being misapplied, causing much misery and privation to those who have to depend upon the stability of these companies. Some of the primitive founders of the Welsh iron trade had for years immense physical difficulties to contend with and subdue, but they proved them selves equal to their undertaking. But a majority of these companies have come into existence at a period when art and science had made undertakings of this kind comparatively light and easy. All the improvements that have taken place in this trade during the last quarter of a century seem, under the guidance of these companies, only to render things more complicated and difficult to arrange. point of fact, as regards iron-making in many places in Wales, those improvements would have been better left alone, for the simple reason that there have been such unfair advantages taken—such a have been such unfair advantages takenmurdering of the goose that would if let live have laid repeatedly

the golden egg.

To be more explicit, I will just take the hot-blast into considera

To be more explicit, I will just take the hot-blast into considera To be more explicit, I will just take the hot-blast into consideration, which was intended to give an increased rate of production. Of course this is so; but what are the nature and properties of many of these hot-blast fusions it would puzzle many very clever individuals to define; while to render much of the produce either truly malleable or marketable would require very great skill indeed; and I have no hesitation in affirming that as much as 40 per cent, is sacrificed at some places in giving this species of iron the requisite marketable value and test. Not for a moment would I have it believed that good and reliable iron cannot, and is not, produced in the presence of hot-blast, but it is the undue application and advantage taken of this improvement to which I would beg to call the attention of ioint-stock companies. attention of joint-stock companies.

I have ere this, whilst employed at some of the works of these con panies, endeavoured to ascertain the percentage made saleable. course I had no other guide than my personal observations, but I am convinced that as much as 40 per cent, is sacrificed in the manufacture. But this is not all. The greatest difficulty yet to be overcome

is to give the remnant a saleable character; for in doing this it fre quently happens that as much as 20 per cent. of the bars intended for the market are quite unfit for that destination, in consequence of the angles presenting such a rough and rasp-like appearance. But to render this important matter more plain, we will take four heating furnaces, and their approximate production, as a guide. Now four heating-furnaces, of a capacity of 4 tons each, could product 8 tons each every alternate 12 hours, or a total of 32 tons daily 352 tons weekly, 1408 tons monthly, and 18,304 tons annually. But 352 tons weekly, 1408 tons monthly, and 18,304 tons annually. But only allowing 10 per cent. to be found usaleable, it would give a total annual loss of 1830 tons. And as the monthly produce of these furnaces is 1408 tons, it follows that the unsaleable bars produced annually exceed the monthly produce by 422 tons; in fact, the unsaleable bars are equal to five weeks' produce, so that not only are many of these companies running the whole of their costly machinery, burning coal, melting bricks, &c., for five weeks in the year without a particle of returns, but they deprive every person paid by the ton of the profits of his labour during the above time. This results from not adapting the several parts of the process to each other; from not ascertaining what percentage of the several ingredients will produce a reliable article. All the incidents connected with the manufacture of iron are well known, but too many have undertaken the manufacture ascertaining what percentage of the several ingredients will produce a reliable article. All the incidents connected with the manufacture of iron are well known, but too many have undertaken the management of joint-stock companies upon book knowledge alone, and without a particle of practical experience in the business they have undertaken. They have aimed at cheapness, but produced white sulphury pig. Of course this quality of iron is very readily produced, but it is the bane of the concern. The majority of these book-wise managers seem led away with the same fanatical notions respecting

This sulphury pig—it is iron, and that is all they seem to know or care about the matter.

What can rationally be expected as the result of these inconsistent and unsystematic methods, either by shareholders or workmen? The a that five weeks in every year are consumed in working unsale-e and unmarketable bars has a demoralising effect upon all con-ned. It is not my desire to enumerate a tithe of the trickery and able and unmarketable cerned. It is not my desire to enumerate a tithe of the trickery and irrational methods that are frequently resorted to by both agents and workmen. Even the employer has his part in producing the evil by establishing the demoralising tommy shop. The manager, instead of placing the fullest possible reliance upon his own discretion and foresight, gets himself surrounded by workpeople who are neither honest nor intelligent, and his management is dependent upon a most objectionable system of espionage. Perhaps no race of men can surpass the Welsh operative in his physical energies, and these, when properly developed, have been the basis upon which most of our original ironmasters have raised the structure of their fortunes; but with joint-stock companies the case is totally different. I feel that if I were to write a novel on Ironmaking under the sanction of Jointif I were to write a novel on Iroumaking under the sauction of Joint-Stock Companies I should have no reason to resort to imagination for materials, as the mental dressing up of a few rea! facts would give me sufficient scope to build my delineations and conceptions upon. The difficulties men have to contend with physically, morally, and socially, whilst employed under such companies if given to the world as facts happening in this advanced age of art and science would only be received by the uninitiated as pure fictions.

Under these circumstances, my advice to unsuccessful joint-stock companies is that they endeavour to procure a higher state of intelligence amongst both agents and workpeople. The schooling of children will avail but littleeither to employers or themselves if they children will avail but little either to employers or themselves if they are to be driven about the world, and hunted down as wild beasts, for giving some proof of scholastic acquirements. Let us have intelligent employers and managers, so that that of the workpeople would be readily reciprocated, for I am sure there is no class of people, when properly treated, more tractable and contented than the Welsh operatives. It is quite humilating to read the frequent lamentations of shareholders who have advanced their money on incommentatives in some districts of the Principality and in location. iron manufacture in some districts of the Principality, and in loca-lities where every rational being would have concluded, from the richness of their mineral resources, that satisfactory profits could be guaranteed. These companies cannot complain of lack of capital or material, so that their non-success can be justly attributed to the mode of organising them. It is a sad reflection on our national character and intelligence that we, as workpeople, have allowed ourselves to be thus far degraded by our subserviency and spaniel-like submission to the systems and arrogance of men in high positions, pocketing high salaries for their incompetent doings. And as to workpeople, I hope that some of us may stimulate others to better actions, for unless we display a greater amount of honesty, skill, and carefulness for our employers' property when entrusted to our care joint-stock companies will soon be things of the past, especially in those places where it is represented that there has been no profit for the last nine years, and where widows and orphaus have for a number of years been deprived of the profits of their humble investments.—Morthyr Tydvil, July 25.

B. R.

"IMPROVED BLAST-FURNACES."

SIR.—In the Mining Journal of July 16 there was an account of Sig.—In the Mining Journal of July 16 there was an account of some furnaces recently completed by Messrs, Onions, of Dudley Port.

Allow me to say that there is nothing particularly new in the utilisation of the waste gases in South Staffordshire. Messrs, Addenbrook have done it ten years, Messrs, Williams six, and many furnaces within sight of Dudley Port are doing it. Nor is the furnace larger than those now usually built—indeed, many built several

years ago are larger.

The make of iron will probably not equal to this date the average in South Staffordshire, instead of doubling it, though this may be due in some measure to stoppages necessitated by the imperfect design of the plant.—Tipton, July 26.

M. S.

COAL FOR THE ADMIRALTY.

SIB,—The recent reports upon the Admiralty coal experiments do not appear to me to raise the question of the relative superiority of Welsh and North Country coal, and for this reason I think all who have commented upon them have fallen into a very grave error. There is, perhaps, not a stoker in the Royal Navy that would employ North Country coal in preference to Welsh, if he had his choice, but he has no voice in the matter—he is merely asked what mixture of the two kinds of coal he considers least objectionable. Being equally interested in collieries in both districts, I cannot be accused of any partiality when I say that for marine purposes the Welsh is decidedly the best, since its evaporative power is greater, and it emits less smoke; the Welsh coalowners have, therefore, much to com-plain of with respect to the Admiralty officials' determination to damage the reputation of the Welsh coal by habitually burning it under most unfavourable conditions, and mixed with a distinctly different—mind, I do not say inferior—kind of coal. For Admiralty purposes I willingly acknowledge that "no combination or mixture pure and nnmived and I would is equal to Weish coal pure and unmixed; and I would also say that no combination or mixture is equal to North Country coal pure and unmixed, and that for marine purposes North Country coal is not equal in Weish. But North Country coalowners have quite as much to complain of as Welsh, for I believe that in shore-furnaces North Country coal can be more economically burned than Welsh. The difference in evaporative power is more than compensated for but the difference in price at the place of delivery the North Country. by the difference in evaporative power is more than compensated for by the difference in price at the place of delivery, the North Country coal bearing rough handling far better than the Welsh, and the small being more readily disposed of. The difficulty of introducing smoke-preventing arrangements on shipboard is well known to all who have tried it, but ashore this difficulty does not exist, because any little break down is very readily adjusted. The most economic mode of burning Welsh coal is to use its heat at once or direct from the coal, but with hittmingus coal, like the North Country coal if the coal, but with bituminous coal, like the North Country coal, it is best to let the coal yield up its gas in the first place (of course, using the heat resulting in the meantime), and to take care that noue of this gas escapes without doing its full share of work in generating steam. To burn North Country coal in a furnace adapted for Welsh is as unfair to the former as it is to burn Welsh in a North Country furnace, and the Admiralty bastard-furnace is equally unsuitable to both. I think the North Country coal should be exclusively used by the Government for all purposes, except the genera-tion of steam on shipboard, and that for the latter purpose Welsh coal should alone be used. This would ensure each district having

fair share of the business, and would secure the maximum of eco.

a fair share of the country.

But really the supply of the Government is a matter of secondary consideration were it not that so many consumers are foolish enough to order "coal on the Admiralty list." Now, for the economic generation of steam where it is practicable (as it is to almost every principle of the country in the world) to construct a furness. ration of steam where it is practicable (as it is to almost every private consumer in every country in the world) to construct a furnace aflapted to the character of coal to be burnt, I really believe that many coals with a high reputation should never be used, and personally I am acquainted with coals selling in the market at 2s, per ton below those I am interested in selling, which (in a specially constructed furnace, the modifications in which appear quite trifling) give a higher evaporative power, and burn almost without smoke. Where the supply of coal has to be taken in sometimes at one place and comparings at another specially constructed furnaces are higher Where the supply of coal has to be taken in sometimes at one place and sometimes at another specially constructed furnaces are highly objectionable, but where the consumer can order his coals direct from one colliery I believe he could often save a large amount annually by choosing a low-priced coal, and adapting his furnaces to it. As the coals from one seam and one district usually require nearly similar treatment, the construction of a special furnace would offer no inconvenience to the consumer, as a furnace for a particular coal would be sure to suit that from a dozen collieries in the same vicinity.

There are many of the remarks made by Mr. Sherley, at the Cardiff Chamber of Commerce meeting, with which I agree, but I think in some cases he goes a little too far. Thus, he says, with reference to the Admiralty trials at Keyham, in September and October, 1863, that, although pains were taken to ensure a full and fair trial, the result did not attain that end. In the first place, it was not intended by the Admiralty to be a practical test of the relative merits of Welsh and North Country coal, but rather an experiment undertaken with

by the Admiratty to be a practical test of weight and North Country coal, but rather an experiment undertaken with a view to ascertain "whether the two coals in combination might a view to ascertain "whether the two coals in combination might not advantageously be used for marine purposes, and also to determine the proportions in which the descriptions of coal should be mixed, so as to obtain the best results." He could not regard this as being altogether fair; it certainly was not holding the scale evenly between the two coal-producing districts, for it prejudged the question, and amounted almost to saying—"We do not intend in future to use either the one coal or the other singly and by itself, but we intend to use a mixture, and we shall be glad to learn in what proportions the mixture had better be compounded." He regretted that Mr. Tomlinson, the representative of the South Wales coal-owners, asked for an adjournment, as that enabled the Northern that Mr. Tomlinson, the representative of the South Wales coal-owners, asked for an adjournment, as that enabled the Northern coalowners to obtain a second supply of coal packed in boxes, and brought to Keyham in such a highly-artificial state as to produce complaints from Mr. Tomlinson. It would have been better if a more thorough programme had been settled beforehand, and both sides made to adhere rigidly to it thoughout. This is quite true, but I do not see so much to object to in the North Country coal being brought in boxes, as it had a greater distance to be carried than the Weish; so that the Welsh coal delivered in the ordinary way was equal to the carefully-packed North Country coal, so far as condi-tion is concerned. tion is concerned.

equal to the carefully-packed worth Country coal, so far as condition is concerned.

The Cardiff proposition that further official experiments should be made will not, I think, meet with any opposition in the North, but it is essential to the interests of both parties that they should be so arranged as to be final and conclusive. It should be recognised that the mixture system is an absurdity, for I am sure the Northern proprietors displayed an error in judgment, as Mr. Sherley says, when they attempted to make out that coal already good was improved by being mixed with that which was worse, and that if it was desired to minimise smoke the surest way to do so was to burn a portion of that coal which produced the most with that which emitted none. If it was out of sympathy for the Welsh coalowners that they insisted upon giving them a share of the trade in working on the mixture system, he could assure them he had, on his part, no sympathy with their trade, so far as smokeless coal was concerned. If the Welsh was the best, let them not rest satisfied until all the Government ships were supplied with their material. It was no use Government ships were supplied with their material. It was no use their merely broaching the matter here, unless they gave to their views some practical force, and he would submit to the Chamber,

views some practical force, and he would submit to the Chamber, with a great deal of diffidence, what he thought was the best step to take in the matter. It occurred to him that they might ask for another experiment, wherein both coal associations would be fully and fairly represented, and that gentlemen superior to anything like bias should be deputed to carry out the experiments.

The Cardiff committee, consisting of Messrs. L. Davis, W. T. Lewis, R. Jones, J. Holst, T. E. Heath, L. V. Sherley, and A. Dalziel, is a sufficient guarantee that the interest of South Wales will be well watched, and I trust an equally influential committee will be appointed in the North, and that they will confine themselves to securing exclusive use of North Country coal for all Government uses except for the generation of steam in marine boilers.

DUELEM. cept for the generation of steam in marine boilers.

Newcastle, July 26.

WELSH AND NORTH COUNTRY COAL.

Mr. THEO. W. BUNNING, secretary of the Northern Coal Trade, as addressed the following letter to the editor of the Cardiff Times, and which we have been requested to insert in the Journal:

has addressed the following letter to the editor of the Cardiff Timer, and which we have been requested to insert in the Journal:—

SIR,—Observing in your impression of the 2d inst., only just forwarded to me, some most unfair and unwarrantable remarks upon Welsh and North Country coal, I deem it my duty emphatically to contradict them, so far as I can from my own personal knowledge and observation.

When in Paris, in 1863, I received a telegram desiring me to proceed to Kerham and watch the experiments to be carried on there under the superintendence of Mr. T. W. Miller, the chief engineer of that port. There I mee with the late Dr. Thomas Richardson, who was to act with me, and Mr. Thomilison, who was to watch on behalf of the Welsh coalcowners.

Having read the report of Mr. R. Taplin, Government Engineer, on the experiments made in Cardiff on board the Isabella Croil, alluded to in your notice of July 2, and noted the following passages:—

"When the Newcastle coal was to be tried, this same engineer undertook to lead the stokers during the first watch of four hours, in his own peculiar way, in the presence of some of the gentlemen of the association, particularly Mr. Nixon, the Chairman, and Mr. Dobson, the consuiting engineer. He directed the stokers to throw the coal on the bars not as pre-determined, but heaping them on as nearly up to the bridge of the furnace as possible, and without observing when the furnaces might require fresh coal, prompted them to charge frequently and to throw the coal towards the extreme end of the furnace. "I list ome surprising that such an avowal of enmity should be evineed and practices by an agout or confidential servant of this association as he appeared to be, and in their presence too, they having previously expressed their desire to us that the experiments should be conducted truthrully." I thought it my duty to make such representations to Mr. Miller as would prevent such practices being again attempted. This gentleman most kindly listened to my suggestions, and arran

and that pure Hartley (when properly burnt) smoked as little as either, and was decidedly more powerful and exonomical. No wonder then, that "the Admiratity seem bent on working this lode to its finish," as you sneeringly remark in your article.

I most distinctly, and from my own knowledge, contradict the assertion that Mr. Thomlinson was given to understand for a moment that the trials were over when he left. On the contrary, when the experiments suggested by the Government were concluded, Mr. Miller stated that if there were any experiments that could be suggested by the Horney, the would be most happy to allow them to be tried; and Mr. Thomlinson stated that if there were any experiments only it b, of his coal, and would wish to have an experiment to see what he could be personally, and we suggested on our side a trial with short fire bars. Our wishes were agreed to, and Mr. Thomlinson remained; and on the 28th of Cetober got his 16 lb., but had to burn 20 per cent. of his fire-bars to do it. He then stated that he was sure all we could do would not beat that, and left us to try the experiment with the short bars alone.

Of course, it is very well known that until lately the fire-bars used in Her Majordy's may were purposely made very long, to prevent North Country coal being properly burnt, it being not so necessary to have short bars for the Welshoam, although short bars improve the economical value of these also, and this we put on record by trying some experiments with short bars. It was then clearly seen although short bars improve the economical value of these also, and this we put on record by trying some experiments with short bars. It was then clearly seen although short bars improve the economical value of these also, and this we put on record by trying some experiments with short bars. It was then clearly seen although short bars improve the economical value of these also, and this we put on the trying some experiments with short bars. It was then clearly seen that the twelsh oals in a trying wor

All the good you are likely to obtain by your insinuation, that the Admiralty

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who "spend money," are more easily tampered with than commercial companies, who earn money." I freely present to you, but would remark that commercial companies have always shown a strong feeling for the mixture, and have for many years constructed their fire-bars that the mixture can be burns with advantage, and that this disposition is now stronger than ever, as year by year the advantage in shape of £ s. d. becomes apparent.

In conclusion, I regret that there should be such an uter want of candour in in conclusion, I regret that there should be such an uter want of candour in the remarks which you have made upon a matter of national importance.

Reconstitution Type, July 22.

THEO. WOOD BINNING.

IMPROVED PUMPING MACHINERY.

SIR,—The second part of Mr. Vivian's invention consists in fitting a tube inside the pump-barrel; one end of this tube carries a valve, on which it fluds its seating; and it has been in operation in Scotland for the last 25 or 30 years. If Mr. Vivian will look in the "Practical Mechanica' Journal" about that date, he will see it figured there. Mr. John Beid, of Binniehill, applied it there. A COALMASTER.

GOLD MINING IN NOVA SCOTIA.

GOLD MINING IN NOVA SCOTIA.

SIR,—In the Supplement to the Journal of June 6 I notice an article signed "A Practical Miner of 30 Years' Experience." That article is evidently written for the purpose of injuring the gold mines of Nova Scotia in general, and the Sterling Gold Mining Company in particular. Articles of that kind generally have but liftle weight, still it is sometimes necessary to take notice of such productions, in order to give a true statement of facts. The gold mines of Nova Scotia must be good, or they would have been forgotten long ago. Scotia must be good, or they would have been forgotten long ago. They have been worked on a small scale, without adequate capital. A large portion of them have paid dividends, and are still doing so. A great many of the leads are small but rich, and others are large and not poor. Belts of slate and quartz are worked in some districts over 6 ft. wide, yielding 1 oz. of gold to the ton. Leads in other districts, over 4 ft. wide, yield over 6 dwts. Such deposits compare very well with Australia.

I have seen most of the districts in Nova Scotia. The writer of the article has not; he only saw Oldham, and another district, where he spent a few hours. He is very quick in generalising, which is always done by those who do not care for facts. He says that his opinion was the leads in Nova Scotia would not pay. If so, why did he not advise the company he was managing for to give up the mine, not sink any more shafts and money? Had he never, in all his practical experience, seen such a thing done? Was it honorable to have spent money when he thought the enterprise would not pay? If the writer means that he never saw money wasted as it was done here, he did not consider what he was saying. He claims that he managed mines in Cornwall. There he has seen larger machinery erected, and deeper shafts sunk. If such is waste of money to propare for systematic mining, then, of course, the Stirling Gold Mining Company has been at fault. The machinery erected is going to reduce expe

—over one-third.

The undersigned would be very happy to have the advice of the writer of the letter referred to acted upon by the company—to send a competent man to investigate the present as well as the former mode of management. At the same time, the character of the leads could be put into an altogether different light from what his letter endeavours to make it appear. All the leads are looking well at the deepest points; but the object is now to open the mine, which was never done before. Cross-cutting is now, at last, considered the best eached of exploring as well as opening the mine, and this is being

never done before. Cross-cutting is now, at last, considered the best method of exploring as well as opening the mine, and this is being done on a large scale.

C. F. Eschweller, C. Cheller, C. Chel

OUR COLONIAL GOLD FIELDS-NEW ZEALAND.

Sig.—In the Supplement to last week's Journal, under the heading "Our Colonial Gold Fields," I noticed Queensland, the queen of colonies, and destined ultimately to become the queen of nations; the largest, most productive, and most populous empire, kingdom, or republic in the world. I pointed out with as considerable detail as space allowed the various untrodden realms of that marvellous great country as the interval of the country of t

public in the world. I pointed out with as considerable detail as space allowed the various untrodden realms of that marvellous great country, as rich in auriferous treasure, and I endeavoured to point out what has been already done, is doing, and is likely hereafter to be performed in the way of "gold finding."

I will now ask your attention, and the attention of your readers, to New Zealand as a "land of gold." New Zealand is very favourably situated, and as the southern hemisphere increases in political and commercial importance it will, doubtless, assume a very influential position. The country is strictly antipodean to us, and the climate resembles that of England more than does the climate of any other colony. Its topographical peculiarities are as favourable for its future as are its geographical position and climatic conditions. The name, as is well known, and, therefore, only requires a passing notice, applies to a group of islands, more especially two. Through the whole of these islands a ridge of lofty mountains extend from south to north, snow-capped a great part of the year; but this frozen crest gives way at intervals, and irrigating streams descend, clothing the mountain sides with stately forests, refreshing verdure, and beautiful flowers. These topographical features necessarily create rivers, which are to some extent navigable, and offer the means of excellent larbours at their mouths, thus facilitating the commerce of the interior, and opening up "water paths" for the carriage of gold and other mineral products, with which the country abounds. The low lands are fertile, and all the products of the temperate zone may be cultivated there.

Theexports consist of flax, hides, tallow, cereals of all descriptions.

lands are fertile, and all the products of the temperate zone may be cultivated there.

Theexports consist of flax, hides, tallow, cereals of all descriptions, polatoes to some of the other colonies, and wool. It is probable that preserved meats and cotton, and perhaps jute, will be soon added to the export trade. The aggregate for last year of all exports, irrespective of minerals, was close upon 2,000,000?. This is a startling fact when it is recollected that 40 years ago there were only a dozen white inhabitants in the whole group. Only 30 years have elapsed since the first real efforts at British colonisation were made. Now there is a white population in the group of islands numbering a quarter of a million of persons, rapidly increasing, and vast flocks and herds in their possession. Very little is now doing in any of the islands in seeking any metal but gold. Is is, however, attested by geologists and mineralogists of experience and authority that most of the more useful metals are obtainable—platinum, copper, lead, silver-lead, and iron, as well as "the precious metals," are, if not in great, yet inconsiderable quantities within the mountain spurs, ridges, and ravines. Some time ago a singular discovery was made of iron-sand, from which steel alleged to be superior to any other in the world has been made.

sans, from which steel alleged to be superior to any other in the world has been made.

The gold fields of the group prove to be much more extensive in large than was for a long time believed, after the discovery of those which first yielded supplies. Now the product is astonishing. Much has been coined and retained in the islands, and the treasures of the colony in gold ornaments and articles is computed to be very great. Hitherto a large proportion of her imports, tea, sugar, and the produce of other Australian colonies, have been paid for in gold. The taperts noted—that is to say, irrespective of all carried away by private hands—has been up to end of last year nearly seventeen millions and a quarter. The Middle Island has chiefly imported this wealth, but it e Northern Island is now discovered to be the richest gold-bearer of the group. The above estimates of the gold actually produced since the discovery are official, but very inexact, experienced persons a lding just half as much again as the total amount. The mining has been hitherto carried on, as in Queensland, in the rudest manner. In New Ulster, and in a few spots in Middle Island, there is suitable michinery: but the pick, bag, rake, and pan are generally the only appliances of the rough and hardy miners of the day. Where ma-

chinery has been brought to bear the results have been most remunerative. Quartz crushing pays magnificently, and this is the way in which gold will be hereafter obtained in this colony.

It will be seen that in New Zealand, as well as Queensland, gold and other mineral productions are not incompatible with the agricultural productiveness of a country, but aid in bringing it forth. Now that the Maori war is over no other disturbance is likely to take place, and the yield of gold will be great and progressive.

GOLD FINDER.

METALLIC MINING IN THE NORTH-No. V

METALLIC MINING IN THE NORTH—No. V.

SIB,—It is noteworthy that in, and bordering on, the Cambrian Mountain range generally, and more particularly in Cumberland, the mineral wealth is of the most varied, and at the same time rich character. Tin excepted, it may be said that this country contains within its borders all the important minerals, which distributed in greater or less quantity over the rest of the kingdom powerfully contribute to that commercial supremacy which places England in the van of civilisation, and renders her the envy and wonder of the world. Like Cornwall in the extreme South, this northern county must look to the development of her immense mineral resources as the mainstay of her present and prospective prosperity; that these are so little known except to those most immediately interested, and the comparatively small and painful progress, contrasted with the capabilities that has hitherto been achieved, must be in a great measure ascribed to the illiberal, almost prohibitory, policy that the mineral lords have carried out in two many instances, not only exacting an unreasonable royalty adverse to the attraction of the necessary capital, but also making the procurement of setts such a tedious, and almost impossible, proceeding that the undeniable status that Cambria has won as a mining district unmistakably indicates what might be expected were she placed in the favourable position enjoyed elsewhere.

To verify my assertion, that her capabilities are such that, were the dues everywhere moderate, red tapeism eschewed, and a fostering spirit exercised, old Cumberland would rank high as a valuable mining field. The principal minerals, and where mined, may be briefly enumerated here. First in importance as in utility (although, strictly speaking, it is foreign to our immediate subject), the coal field in the eastern division of the county used for local requirements, and the 5, 52, and 10-ft. seam of Whitehaven and neighbourhood, partly exported, and yielding an abundant supply of cheap fuel to ing in thickness up to as much as 60 ft., and extending laterally in some cases as much as 500 ft. in either direction from the shaft (which is usually sunk as near the centre as possible) a dense mass of red ore, yielding from 60 to 70 per cent, of iron. In the celebrated lead-producing district of Alston the mines, although so rich for silver-lead 600 years since that a mint was specially retained at Carlisle for the coinage of the silver extracted therefrom, have been uninterruptedly worked since then, and pursuing their brilliant but unostentatious career at present, seem practically inexhaustible. In this district a large supply of brown iron ore (the hydrous sesquioxide of iron) is found in veins, which, to take the rich Roderup Fell lode as an instance, yielding enormous quantities of lead in one part of its course, is charged with iron ore only, nearly 20 ft. wide, in another part, a transformation of ten met with here in the east and west, or bearing lodes, and the result of alteration of strata from which the diverse minerals are segragated, the extension of the railway to Alston, and consequent cheap transit facilities, has created a wonderful development of these iron ore deposits, which being found also occasionally in a stratified position in "flats," hundreds of tons from a very small area have been raised, at as low a cost as 1s. 8d. per ton.

Zinc ore, carbonate and sulphuret, manganese, sulphur, and baryta are invariably found associated with lead and copper, in many instances in quantities to pay for special working. Cobalt has been found at Newlands, and antimony at Bassenthwaite; both these ores, though obtained in considerable quantities, have not, however, paid for working. Cumberland slate is well known for roofing purposes.

found at Newlands, and antimony at Bassenthwaite; both these ores, though obtained in considerable quantities, have not, however, paid for working. Cumberland slate is well known for roofing purposes, that quarried in the vicinity of Keswick, of a light blue colour, is of very fine quality, and in slabs is in great and increasing demand for various economic purposes. Any description of the Cumberland minerals would be incomplete were reference not made to the world-renowned graphite mine, in the township of Borrowdale. The locate of this mine is about half-way up the flank of Seatallor Fell Mountain, which is 2000 ft. high, and distant nearly eight miles south from Keswick. The black lead (so called from its leaden or slaty grey colour, although there is not the smallest particle of lead in its composition) is found in detached sops, or bellies (terms significant of the irregular nature of the supply), embedded in transition slate. The graphite is of a fine granular texture, and its purity is such that the manufacturer simply requires to saw the lumps into the desired sizes,

manufacturer simply requires to saw the lumps into the desired sizes, after calcination at a red heat in close vessels.

First discovered about 300 years ago, the valuable contents led to First discovered about 300 years ago, the valuable contents led to many incentives to plunder by workpeople, and also to ceaseless endeavours, often successful, by neighbouring miners to cut through and carry off the mineral, actually culminating on one occasion in a band of miners openly mastering the armed guard placed for its protection, and holding uncontrolled possession for several days. These flagrant depredations were at length met by a special Act, passed in the reign of George II., which made it felony to steal the black lead. The inefficient local Government, and rude lawlessness of that and preceding reigns may partly account for the existence of a state of things which led to the dishonest enrichment of many in the vicinity; but that the temptation to plunder was strong will be evident when it is stated that one of the sops discovered yielded 28 tons, and as much as 46s, per lb. has been obtained for the produce. This price, taken in connection with the fact that the short period of six weeks' working in each year sufficed to supply all requirements, the value of taken in connection with the fact that the short period of six weeks' working in each year sufficed to supply all requirements, the value of of the mineral so raised often ranging from 30,000% to 40,000%, is the best evidence of the precious character of the deposit. If not instructive, it would at least be amusing to describe the armed surveillance and strict search on egress exercised over the employees when the mine was at work, with the laborious precautions taken for its safety when closed, even in modern times, but space will only permit me to add that, probably from the idea that the graphite was worked out, operations were suspended in 1850; was re-opened again for a short period in 1853, under the auspices of a London company, who, according to local report, could not look for successful results, seeing that they did not give the sett anything like a fair trial.

Certain it is that although several new plumbago mines have been recently opened out, notably the Sturbridge and others in the United States of America, throwing a supply into the market in greater ratio than the largely increased demand, yet the price is still such as would tempt a renewed search in Borrowdale for existing but undiscovered deposits, which, in the absence of any better reason to the contrary

deposits, which, in the absence of any better reason to the contrary than short-lived recent poverty, may be presumed to exist; and, freed from the natural bias which tinges interested statements, the confi-dent general opinion of resident miners conversant with the matter,

that judicious working and a little perseverance are all that is needed to open out such another mine, has something at least to found on more stable than a dubious probability.

Returning to the ores of lead and copper, the mines of Greenside and Coniston worthily represent the productive capabilities of the Cambrian range in these metals. The first-named mine, on the confines of Cambrian range was the stable productive capabilities of the Cambrian range in these metals. wrought for many years past—a success heightened in no slight de gree from the enlightened management exercised, which, with du regard to economy, is careful to secure efficiency by providing dressing and smelting appliances of the most approved and complete character. Owned by a private company of a few individuals, precise information regarding the past and present output is well night undatatainable. It is well known, however, that large profits have been, and are now, made by the proprietary of this (from its argentiferous notoriety) well-named silver-lead mine, and which bids fair to be considerably exceeded in future, inasmuch as a new level lately

brought up under existing workings has proved that the lode increases in productiveness as depth is attained. Coniston Copper Mines are well known to have been wrought extensively from a very early pariod, making large returns of high-priced ore, valued as high as 30,000L in some years. In instancing these successful mines I do not by any means imply that similar or even approximate results will in all cases necessarily follow the working of contiguous mining ground. My aim is to show that in the North we can also point to great successes, from which we may safely contend that there are many more to reward future honest endeavour.

Caldbeck, July 27.**

THE MINERAL WEALTH OF IRELAND.

THE MINERAL WEALTH OF IRELAND.

SIR,—As a constant reader of your valuable Journal, I cannot help noticing how readily the enterprising public of England engage in foreign speculation, while the mineral wealth of this country is, unfortunately, to a great extent disregarded. I could assign many causes for this, which in themselves would seem reasonable enough, but when I look on the vast field which here presents itself, possessing qualities not to be excelled, all other minor considerations disappear, and I must, therefore, give vent to my feelings of regret that so enlightened, enterprising, energetic, and wealthy a people as the British nation can boast should overlook at their own door the very foundation of wealth and prosperity; the hills glitter with its brightness, while the valleys are the receptacles of untold wealth, requiring nothing but skill and capital to reveal its abundance. What branch of industry can be more remunerative than mining when associated with the advantages which are here afforded? Mineral properties possessing qualities which cannot fail to render them highly valuable can be obtained on easy terms; many of them worked to a depth of 50 fathoms and upwards, approaching a point where profitable results would, doubtless, reward the adventurer had he persevered a little further. These mines, many of which were worked in a practical manner till the funds of the companies were exhausted, could now be reworked to great advantage; the labour of years is already wrought, and the capital that would place them in the Dividend List small indeed.

Ireland, too, has for a long time been subject to the inroads of parties possessing but too limited capital, and who have excavated the surface in a manner that might have reflected credit on the ancient Romans. These primitive miners, however, have had their day. It is now high time that modern wealth and science should combine to remove from the public all doubts regarding the mineral deposits of this country, which in my view are equal to any in th

MINING IN THE SOUTH OF THE ISLE OF MAN.

SIR,—The section of country rock developed along the southern coast of the island is a highly schistose clay-slate formation, and the strike of the beds, particularly in the districts where mining operations are being carried on, is clearly defined, and the main as well as the cross joints of the bedding well filled with most rich looking friable carbonate of lime, thus giving to the structure a highly metalliferous appearance.

et the strike of the beds, particularly in the districts where mining operations are being carried on, is clearly defined, and the main as as the cross joints of the bedding well filled with most rich looking friable carbonate of lime, thus giving to the structure a highly metalliferous appearance.

The GIRAT BRADDA lede is one of vast magnitude, averaging 40 ft. wide in many places, and can be clearly traced intersecting to wheadlands for a distance of upwards of two miles in length. This champion lode runs in a north and south direction, and has a selight inclination to the west. In times long gone out of date this mine was extensively worked by the ancient miners; evidences of the levels are yet to be seen driven at various points from highwater mark, with a view of extracting the gossans, which abounded in immense deposits near the surface. Some idea may be formed of the great extent of their workings, when I state that there are some thousands of fathoms of lode stuff worked out for this purpose a clone. Some few years ago the gossan referred to produced by assay from 4 to 4½ per cent. for copper. At present the principal some thousands of fathoms of lode stuff worked out for this purpose a clone. Some few years ago the gossan referred to produced by assay from 4 to 4½ per cent. for copper. At present the principal some thousands of statement of the workings, when I state that there are some thousands of statement of the decision of the decision are being carried on at the extreme north point of the beadland, where a shaft is sunk some 60 fms. under the level of the same and the same a

40 to 60 ozs, or silver to the ton. Indie is about the studied and at surface, which is a fine sample of the lode. I have studied and taken great interest in this part of the country, and am conversant with every yard of ground on the property. The lodes in question with every yard of ground on the property. The lodes are all pointing and traversing into the hill to the northworkings, and important results will undoubtedly be met with in that quarter, particularly at the point of intersection, as lodes of this class and description can scarcely fail in making great deposits of mineral. There is another lode of great promise in the grant which has not been explored, but some future day I will endeavour to explain my ideas on this point.

deavour to explain my ideas on this point.

FALCON CLIFF MINE.—This sett is situated about 150 fms. to the east of the Ballacorkish Mine, and is bounded to the north-east by the same property. The grant is very extensive, comprising an area of about 2000 acres, and well watered for mining purposes, together with good roads, and within two miles of an excellent shipping port.

The configuration of the district is well adapted for adit level mining.

6 ft. wide, on an average, with an inclination to the eastward. The composition or matrix between the wallsconsists of a beautiful flockan, fluor-spar, mundic, and carbonate of lime, with stones of lead, copper, and blende ores; in fact, such promising indications, so very near the surface, are of rare occurrence, and if the lode were explored to a sufficient depth, and that at a point near to the east and west courses, discoveries of importance would, undoubtedly, be met with. From close observation I attach great importance to the ground situated to the north-east of the sett, more especially from the fact of recent discoveries made in the adjoining grant. I may venture to assert a more promising field for speculating cannot be met with in the south of the island. Taking into consideration the geological position of the site, combined with the discoveries already made, and the highly mineralised stratum or rock in which the lodes are embedded, the cheapness of the ground for working, together with numerous other favourable facilities it embraces, I believe the property offers such inducements for speculation as seldom combine so great a prospect of certain profit.—Isle of Man, July 27.

A MINER.

MINING IN CORNWALL AND WALES.

SIR,—Nothing can show the great advantage of having such a medium of intercommunication as the Mining Journal—for the refutation of error and the dissemination of truth—than the publication in its columns of the letter of Mr. N. Ennor last week. The strange views entertained, and frequently reiterated, by some prejudiced men are calculated to create distrust in the minds of capitalists, who might otherwise be disposed to assist in the development of our princeral wealth—to their own great gain and to the material of our mineral wealth-to their own great gain and to the material

assistance of the local industrious population.
But to really practical men, experienced in the history and character of the neighbourhood, the effusion from Mr. N. Ennor, in the Supplement to last week's Journal, cannot but be amusing, espe-

Supplement to last week's Journal, cannot but be amusing, especially when he makes such an assertion as that the Cardiganshire and Montgomeryshire mines have not paid back to the promoters one-half of the money expended on them.

I will take the expenditure of the Lisburne, East Darren, and Cwmystwith Mines to have been 54,750%. Now, these three companies alone have divided profits to the extent of 315,950%, the oldest amongst them being the Lisburne Mines, established as a dividend company thirty-six years ago. Take all the mines in the county of Cardigan for the last forty years, including all the money that has been uselessly spent in abandoned schemes, and those that have been fairly managed, and where will Mr. Ennor find this amount has been expended? In addition to these mines there is Cwm Erfin, South Darren, Bwich Consols, and Bronfloyd in the Dividend List; and Goginan, Powell United, Plyulimmon, Bwadrain, Cefn Brwyno, and some others giving handsome profits, and nearly all where

and Goginan, Powell United, Plyulimmon, Bwadrain, Cefn Bewyno, and some others giving handsome profits, and nearly all where machinery is erected paying costs. The Van alone is sufficient to answer for the Montgomeryshire district.

Mr. Ennor's mode of calculation is a most ingenious one. He takes Cwmystwith as 60l. paid—interest, 20 years, at 6 per cent. 70l = 130l.; but he admits that instead of receiving 70l. in twenty years the company received 385l. Now, anyone should be able to see at a glance that having received quarterly for twenty years an interest equal to 385l. in the aggregate, instead of 70l., would be in a position to invest that money to such an account that it would puzzle even Mr. Ennor himself to make a clear statement respecting it. The Lisburne, East Darren, and Cwm Erfin, quoted in the same way, will, of course, bear the same explanation. Further on in his letter Mr. of course, bear the same explanation. Further on in his letter Mr. Ennor says, "When I first came into Wales the Messrs. Taylor were in possession of Cwmystwith," &c. This was not the case, and it shows that Mr. Ennor's memory is very defective, or he has not been

well informed.

I should not have answered his epistle had it not contained a complete misrepresentation of facts and figures, and which probably, emanating from such a well-known practical man, might be received as truthful by some distant readers who have not the opportunity of learning the facts. It may be possible that tin may suit Mr. Ennor better than lead districts, for very certain it is that of late Mr. Ennor's great abilities have not been called to aid us in either of the two counties named by him.

Ganjan Lyby 26** Goginan, July 26.

MINING IN CALLINGTON-HOLMBUSH AND KELLY BRAY

MINING IN CALLINGTON—HOLMBUSH AND KELLY BRAY. Sin,—Having this week vi-ited a few of my old friends at Callington, and feeling interested in mining, I have taken a waik to some of the mines in that neighbourhood, among others vi-iting the Old Holmbush and Kelly Bray Mines, and, to my great pleasure, saw they were being mot vigorously developed, the engine steadily at work forking water, the whims drawing ore and mundle to surface, and the crusher at work. About 100 English youths are employed, with a large number of miners, smiths, carpenters, &c. I was additionally pleased at he ring that all that has been done, and is even now doing, is without the aid of a single call, which to me is truly as onlishing, and at first I thought it could not be possible, but it is positively affirmed to be the case.

These mines a few years since were said to be forever abandoned; but now I find by mining men in the neighbourhood quite a change of views. The gratest care in expenditure, and, at the same time, was amounts of explorations are continually the aim of the parties engaged. If these are facts—which I believe them to be—I consider the promoters and managers engaged are worthy of the utmost praise and confidence, and, if not, I should feel obliged by someone setting me right, as truth alone will stand the test.

MM. GREENSLADE OLDS.

MINING IN CORNWALL-THE MARAZION DISTRICT.

MINING IN CORNWALL—THE MARAZION DISTRICT.

STR.—Mining in the Marazion and Goldsithney districts about forty years ago, and for a century previous, was carried on extensively, and most of the mines paid large profits; but the local enterprising men have departed, and little has subsequently been done, chiefly owing to the high dues or revaity demanded by the owners of the land. Properly has, consequently, greatly faller in value, trade in most of the once flourishing villages and towns been paralysed, and now everything has the appearance of emptiness and poverty—in fact, just like a cage without a bird.

Latterly, however, some more liberal-minded gentlemen have seen fit to meet the times, and reduced the royalty or dues. The result is that a discovery of great importance has been made on a new lode recently discovered, from 4 ft. to 8 ft. wide, of the most promising character, and pos-essing all the indications of an extensive deposit of mineral underneath. This lode is situate near and parallel to Old Wheel Fortune, Owen Vean, wheal Jewell, Wheal Caroline, and Wheal Neptune, with several nines of less criebrity. The ores from these mines were of the richest quality, averaging from 10 to 50 per cent.

Wheal Jewell is a sett situate in the centre of the above-named mines, containing several tin, as well as copper, lodes, of great promise, and the recent discovery be situate; and on a parallel lode to the Old Wheal Jewell and Wheal Neptune lodes, about an equal distance from each. These, with the adjoining—and, from recent di-coveries, very great results may be expected from this new mine. Capitalists will do well to pay more attention to this locality in furnithan they have in years past. Labour in the neighbourhood is abundant, materials also cheap, and to be had to any extent. Capitalis all that is required to raise the district to its former state of prosperity. New mines off: The greatest chance of profit and success, the cost of raising the minerals being about 50 per cent. less than in very deep mines.

THE QUEEN MINE.

THE QUEEN MINE.

SIR.—I have very little to say this week, and there is no occasion, as the mines in the neighbourhood will undoubtedly give repeated allusious to the riches of the already world-renowned and far-famed. "Queen."

SILVER DEPARTMENT: 5901, worth of silver was promised to be ready for sale bett week. I venture to say it will be by the end of next week nearer 10001, than 5001, worth. We shall, without a shadow of a doubt give a 2s, dividend to September, and as yet we cannot be considered to have made a regular start. COPER DEPARTMENT: 2004, worth of copper will be ready for sale by next pay-day, Aug. 6. Rocks of copper ore are now being raised from the whim shaft, which Copt. Knott values at 8t, per ton, and, by deeper sluking, we may expect to have less and less mundle, and more ore. Here is a little arithmetical queetion:—This look can be driven and stoped upon for 3t, per fathom, and is worth 25t. Every miner should, with bis costs, receive about 4t. 10s. per month; say 60 men are employed upon the look—and I hope to have hundreds bye-and-by—these 60 men would work or excavate and raise to surface 1½ fathom of ground per man each per month, equal to 37t. 10s. Multiply this by 60—result. 2250t.; expenses, 60 men and costs, at 4t. 10s. seal, 220t.—profit, 19s0t. Bleches little facts and figures, how pretty they do look, and it as easy as A B C to accomplish this in real practice—aye, multiply one such lode by five lodes and where are we then? Further, say the five lodes are opened upon to a depth of 100 fms. backs; be moderate, and multiply the last by 5t, where have we got to now? Again, say you find no ore, what is the result then? Anwer, nit. I thought it best to add this to save someone else the trouble. However, so far as we have gone in our new workings, mf figures are not far out; of course, at some points the lode may increase or decrease in value, but depend upon it winen we have done with the Queen there will be little would life for ourse, at some points the lode may increase or decreas

doubt, by sheer ignorance and impudence, as they generally go together. Poor wicked old man! how galling it must be to consider yourself a practical man, and see youths like myself finding the rich masses of mineral wealth that have been for years at your elbow's side, only you did not know it. How came all the riches to be left at the Old Treburget—there's the rub; and the Queen and the Virtuous Lady?

I am on the wing, and writing this hurriedly, or would say much more; however, I have one favour to ask of you. I venerate old age—nothing is more noble or honourable than the hoary head; but when old age employs its time in striking cowardly with a pol-oned dagger at the carnet attempts of youth to do himself and his branch of business good, such a man gots intolerable. I have almost forgotten the favour.—If any reply is made to this (the guilty needs no accuser) charge it as an adverti-sement, as you do my scribblings, and you may depend upon it the party will become as quiet as a lamb being led to the slaughter. Queen shares are still to be had at 3l.—worth 10l.

Tamar House, near Tavistock, July 28. Thos. J. BARNARD.

[For remailader of Original Correspondence see to-day's Journal.]

[For remainder of Original Correspondence see to-day's Journal.]

FOREIGN MINING AND METALLURGY.

FOREIGN MINING AND METALLURGY.

The term prescribed for the legal existence of the mechanical company known for the last fow years in France as J. F. Cail and Co. having run out, a new company has been formed under the same title. This new company is to exist for twenty years from July 10, 1870. The share capital has been fixed at 280,000L, in 14,000 shares. A working capital is also to be created by an issue of obligations to the nominal amount of 480,000L, repayable in twenty years. All its lands, premises, effects, and good-will are transferred by the old company to the new company in consideration of the payment of 185.573L. The Call family will occupy much the same relation to the new company as to the old. A company has been formed in France for contracting for the execution of raliways and public works, as well in France as abroad. The duration of the company has been fixed at ten rears, dating from July 1, 1870. The share capital has been fixed at the rears, dating from July 1, 1870. The share capital has been fixed at the rears, dating from July 1, 1870. The share capital has been fixed at the rough of the south of Charierol Bla-t-Furnaces and from Works Company. The Holtand Mining Company at Wattensheid (Prussta) has reported by gress for 1889. The total quantity of easi extracted for the year amounted to 3,226,495 bushels, or 18,875 busels more than in 1868. The quantity of coal disposed of during the year was 3,091,218 bushels, and the sum derived from the sale was rather less than 1885. The lucrase in the production last year will be seen to have been small; various obstacles opposed themselves to its extension, but in consequence of the meanires taken it is expected that 1870 will witness both an increase in the production and a diminution in the cost price. The dividend for 1869 has been fixed at the rate of 10 per cent, per annum, and a substantial balance has been carried forward to the credit of 1879.

There is nothing very remarkable to report in connection with the Belgian coal trade. Prices are maintained firmly, and there is no Belgian coal trade. Prices are maintained firmly, and there is no anticipation of a fall. Orders are however, less abundant, com-merce and industry having been seriously affected, both by the war merce and industry having been seriously affected, both by the war and by the present financial crisis. But as there are scarcely any stocks, and as the supply of labour is scanty, many of the working miners having been called away by their military duties, the Belgian coal trade is not expected to present much alteration. The war will beseft the Belgian coal trade in occursored; it will stimulate the expertation of Belgian coal to France, as Prussian coal will no longer be permitted to enter France, and English coal will also be imported into France less readily, the war being carried on both by sea and land. The Belgian iron trade is reduced to a much less satisfactory position by reason of the war; the change is all the more marked as the state of affairs for several months past has been one of much prosperity. The forgemasters are not without uneasiness, as coming events may prove hiperious to them. Happily, orders received previously still assure employment to the weaks for some menths to come.

The greatest activity continues to prevail in all the French coal

prosperity. The forgemasters are not without measures, as coming events may prove injurious to them. Happily, orders received previously still assure emrloyment to the weeks for some menths to come.

The greatest activity continues to prevail in all the French coal basins; everywhere deliveries are being made on a large scale, and railway plant is beginning to make default in the Nord and Pas-de-Calais. The mines of the Pas-de-Calais are especially in an exceptional condition, as the orders on hand are very numerous, and there is nowhere any stock; prices are supported with considerable firmness. The coal markets of St. Etienne, Firminy, and Rive-de-Gier present the same features,—a considerable demand, an ab-ence of stock, a firm maintenance of prices. Some uneastness is felt as to prospects for the whiter, unless the production can be increased; it is even difficult now to obtain certain qualities of coal. Recent portifical complications have exerted a great influence on affairs, and to the animation of the last few months great quietness has succeeded upon all the metalingical centress of France. At the same time, orices have not yet given way. In the Cham-agne district scarcely any cales of refining pl have be in reported. I too has been disposed of tolership regularly; in coke-made fron, however, transactions show a considerable falling off. Fron from charcal-made pig is quoted at 92.4x, to 91, 12x, to 91, per ton; ended ditto, 81, 12x, to 91, per ton; ended of the original propers. The foundries, however, begin to complain that they are not so well off for orders; those which produce heavy castings are still actively employed, but the same cannot be said of those establishments which produce lighter articles. Machine from maintains a good tone.

In the Moselle, as in the Haute-Marne, there has been a certain

not so well off for orders; those which produce heavy castings are still actively employed, but the same cannot be said of those establishments which produce lighter arcicles. Machine iron maintains a cood tone.

In the Moselle, as in the Haute-Marne, there has been a certain slackening of affairs, but prices are still supported with considerable firmness. White refining coke-made pig has brought 2l. 18s. 4d. per ton; speckled pig, 3l. 0s. 10d. per ton; grey refining pig, 3l. 3s. 4d. per ton; casting pig, No. 1, 4l. 4s. per ton: ditto No. 2, 4l. per ton; ditto No. 3, 3l. 16s. per ton; ditto No. 4, 3l. 12s. per ton; ditto No. 5, 3l. 8s. per ton. Refining pig, charcoal-made, is quoted at 5l. 8s. per ton; rolled coke-made iron, 8l. 4s. to 8l. 8s. per ton; cast pipes, 6l. 16s. per ton; solid columns, 5l. 16s. per ton.

It was reported some time since that a contract for 10,000 tons of rails and accessories for the Sedan and Lerouville Railway had been let to MM, de Wendel and Co., at 9l. 4s. per ton. It appears, however, from subsequent enquiries that the price named is higher than that actually secured by MM. de Wendel. The precise terms of the contract are as follows:—One lot of 2500 tons, with accessories, to be delivered at Sedan, at 8l. 5s. 7d. per ton; two lots of 2500 tons each, to be delivered at Verdun, at 8l. 7s. 1d. per ton; and one lot of 2500 tons, to be delivered at the course of this year and partly in 1871 and 1872). Applications have been made for a concession of bearing- of hydroxided colitic tronstone in the communes of Lay 8t. Christophe, Bulmont, and Buxtere-aux-Chânes in the arrondissement of Nancy, in thedepartment of the Mearthe. The concession sought for comprises a superficial area of 1412 acr. A. A similar concession, cumprising 1428 acres, is being competed for in the communes of Maron and Chaligny, in the department of the Mearthe. The concession sought for comprises a superficial area of 1412 acr. A. A similar concession, cumprising 1428 acres, is being competed for in the communes of

contracts which they had entered into with French metallurgical firms.

Copper has experienced a slight fall at Havre. Chilian in bars has been neglected; current marks are dealt in at 682. 16s. per ton, Paris conditions. The German markets have been extremely quiet; quotations are purely nominal. Tin has experienced a fresh fall; in Germany there is a complete stagnation. At Rotterdam it is almost impossible to quote the price of tin; business might be done at sensibly lower rates than those current hitherto. At Paris, Spanish lead has made 184. 8s.; French, 184. 12s. to 184. 16s.; and German, 184. 12s. and 184. 16s. per ton. Lead has been generally firm on the French markets, and also on the German markets. Zinc has displayed a somewhat better tendency. At Parisrough Silesian has made 194. 8s. per ton. what better tendency. At Parisrough Silesian has made 191. 8s. per ton.

FOREIGN MINES.

ST. JOHN DEL REY.—Morro Velho, July 1: Morro Velho produce econd division of June, 11 days, 3150-6 oits., yield 2:394 oits, per ton. Shaft A unk in June 4 fms. 4 ft.; shaft B sunk in June 3 fms. 3 ft. 2 in. A layer of ouch hard pyritic atone has been reached, and prevented more rapid progress.

DON PEDRO NORTH DEL REY (Gold).—Mr. F. S. Symons, June 29, reports—Produce: Weigned to dace, 4786 oits; estimate for month, 6786 oits.—dine: Operations proceeding with regularity, and nothing new to advise; no

reports-I Mine: Op Mine: Operations proceeding with regularity, and nothing new to navine; no box work, and but average general work excavated. The water has increased in the stopes in Canoa, sinking in abeyance, and will be until a water-wheel replaces animals in driving the hors-engine. We have struck nothing rich at Allee's west; the lodes maintain their size and promising appearance; we are vigorously exploring on them. No. 6 gives fair stake work, but none sufficiently rich for boxes. Good dury doing at Treloar's level and middle adit; the ground in latter is not so troublesome. As an incentive to the workmen, in former they had it, per fathom driven in lieu of overtime, and in latter to the three old hands who were put there to show new ones how to handle the ground I have promised 25s, per fathom driven in addition to overtime.

ANGLO-BRAZILIAN (Gold).—F. S. Symons, June 20: General Operations: Several sainta' days have militated assintattendance of the natives,

rations: Several saints' days have militated acainstatte induced the native, and it has not been so good as I could wish. The features of the mine are much the same as last reported on. A few hands are kept working at Haymen's, and as large a number as possible concentrated at Dawson's and Foster's, the latter embracing the Fundao. We are pushing on with the deep adit, so as to unwater Foster's as quickly as possible.

GENERAL BRAZILIAN.—T. Treloar, June 28: General Operations: I have much pleasure in stating that the

as possible.
N.—T. Treloar, June 28: General Operations: GENERAL BRAZILIAN.—T. Treloar, June 28: General Operations: I have much pleasure in stating that the operations generally are progressing very satisfactority. At 8c. Anna, the shallow add first commenced was, as advised by last post discontinued on the 15th Inst., since when another has been commenced 9 ms. If t, shallower. At present, the work is merely an open cutting, but from its position we hope to run this add into the loue in about fifteen or eighteen months. The depadit is now advancing apace, as the force here has been increased. At Institut, the shaft No. 3 for ventilation has been communicated, and besides this about 30 ms. will be driven in the addit. The middle add its also progressing favourably, the ground at present being dry ferruginous sand-tone. In our explorations nothing calling for special remark since last advised has occurred. In both Davey's and Silva's cross-cuts the jacotings formation is of very promising character. At Itabeira the force allotted to explorations are employed in clearing the Itabeira watercourse. It is ad-

visable to do this, and repair a stamping mill, in order that the ore mays treated immediately after it is raised in the mine. The new store continues a advance apace, and a slaughter-house and a room for systematical washing of samples have been commenced. The weather is very fine, and the health of the establishment good. The ground levelled for the Borraxado rego is all favourable, and the mapping of the property is proceeding fairly.

ROSSA GRANDE (Gold).—R Hilcke, June 28: Mine: The lode at Mina de Serra presents no change of importance since last reported on. The auriferous quality of the stone in the 56 and 50 continues to be poor, thoughts odd maintains its good size. In the 70 the lode is still split up in amail branches,—Gongo Mine: In driving Angove's level west we have met with a change in the jacotinga during the past fortnight; its appearance is more favourable for gold. At all other places of operation nothing noteworthy has occurred.

UNITED MEXICAN.—Guanaxuato, June 21: The reports from the mines of the old concern are, on the whole, more cheerful this month.—Mine of Jesus Maria y Jose: In this mine, the work on our reserves has been cantinued, to supply our haclendas with ore, and the bus-cone works are going much as usual. The sale for the four weeks ending June 16 was \$5900. In the frent de San Andres, a buscone placed by our miner followed up a small string of ore running into the bajo (lower part). This has improved, and widened out and he is now working on a cuerpo (lode), nearly 3 varas broad, running of south 45° cast. The workmen assert that it is another new lode, and our miner of personal inspection, and he is now working on a cuerpo (lode), nearly 3 varas broad, running of good ore further south, in a place called La Soledad, in the year 182 month and the part of the four works and he work in the purposable. The place has been marked El Socorro.—Mine of Remedios: In the mine we are at work in the upper levels, and have increased the extraction by putting a few workmen on the reserve

deep, and about the middle of the week I shall open the cross-cut northward to ent the lode.

FRONTINO AND BOLIVIA.—The directors have received the usual advices from the mines, accompanied by a remittance of 400 ozs. of gold dar, produce for May last. The new mills, after three days satisfactory working were suspended, owing to a heavy storm having blocked the roads and transverse suspended, owing to a heavy storm having blocked the roads and transverse, the men were busy in repairing the damage, and the mills would rasms stamping as soon as it was possible.

BATTLE MOUNTAIN (Nevada).—Wm. Nancarrow, July 6: Virgin Lode: The two levels at the bottom of the shaft were holed last night, and a soon as we have squared up between the two levels we shall commence to drive north of the winze, which will be to-night, drive back so the from the shaft, and stope the back of this plece of ground, beginning the winze side, as we shall have to leave a plece of ground by the shaft for secting the shaft. We have real good lode to begin to drive on from the bottom of the winze north, also to stope from the winze south in the back; I have told you before that this piece of ground is 30 ft, long.—Lake Superior: There is no change in the north level since i wrote you last. In the south can be have driven 6 ft, beyond the sild, where the lode is beginning to make, or form itself, again; it is now about 2 ft, with a link over the production of the shaft is down about 2 ft, with a link over coming together; we are putting in this brint the shaft to-dix, and shall have to thui er both levels. At the Troy the shaft is down about 24 ft., with a link ore coming in, so as we cut in under north helow to follow the ore. We have to thui er both levels. At the Troy the shaft is down about 24 ft., with a link ore coming in, so as we cut in under north helow to follow the ore. We have to thui er both levels. At the Troy the shaft is down about 24 ft., with a link ore coming in, so as we cut in under north helow to follow the ore. We have to th

at present wore one, and a meeting has a kindy appearance, and a meeting sink some 30 or 40 tr., or or none.

ECLIPSE (Gold).—Capt. Barratt, June 25: We have completed the smith: shop, built office and four feel-rooms for officers, arranged the made say track from mine to the base of the mountain. Thepe in a formight we shall be track from mine to the base of the mountain. Thepe in a formight we shall be sinking the main shaft and carrying on other mining operations at the mine. All our works are being pushed on as fast as possible, and I hope soon to need the arrival of our stamps; when they arrive they shall be created with all possible dispatch, so that we may commence returning gold.

LUSITANIAN.—The lode in the rise above the 28 is worth § ton per fatherm. In the 140, east of Taylor's, on Basto's lode, the lode is I ft, wide, con-

LUSITANIAN.—The lode in the rise above the 28 is worth a ton per fathom. In the 140, east of Taylor's, on Basto's lode, the lode is 1 ft. wide, composed of schist and quarts. In the 140 west the lode is worth 1 ton of ore per fathom. In the 130 east the lode is 1½ ft. wide, composed of schist and flooks, in the 130 west the lode is 6 ft. wide, composed of quarts and stones of ore. In the 20 east the lode is 2 ft. wide, composed of schists and slowes of ore. In the 120 east of River shaft, the lode is 2 ft. wide, composed of schists and quarts, what near of ore. In the 20 east the lode is 6 ft. wide, composed of quarts and sones of ore. In the 20 east the lode is 6 ft. wide, composed of quarts and country and quarts. In the aft level east the lode is 4 ft. wide, principle stand of ore. In the 28 west, on the branch, the lode is 6 ft. wide, vicely gived and country. In the 25, east of cross-cut, the lode is 1 ft. wide, worth 1½ to a ft ore per fathom. In the 18, east of cross-cut, the lode is 8 in. wide, yielding small stones of ore. In the 38, east of cross-cut, the lode is 8 in. wide, yielding small stones of ore. In the 38, east of fathory, so mill lode, the lode is 1 in the camere lode, the lode is 1 ft. wide, worth 1½ ton of ore per fm.—Carvainal: In No. 11 winze, below the 25, on the camere lode, the lode is worth 1 ton of lead per fathom. In the 30 east incline, the lode is 1½ ft. wide, composed of quarts and country. It the 30 east into branches, branches, composed of quarts and flooks. In the 4 east the lode is worth 1 ton of lead per fathom. In the 30 east the lode is producing stones of lead. In the 20 east the lode is 1ft. wide, composed of quarts and mundle. In the 30 east the lode is producing stones of bendo. In the 10 the lode is split into branches, all usproducitys, stones of lead. In the 10 the lode is split into branches, all usproducitys stones of bendo.

PESTABENA UNITED.—Thomas Roberts, July 18: Peschiera Mine:

producing atones of biende. In the 10 the lode is split into branches, all upproducing atones of biende. In the 10 the lode is split into branches, all upproducing.

PESTARENA UNITED.—Thomas Roberts, July 18: Peschiera Mine: The end driving south, on the western part of No. 2 lode, in the 23, yields 100s, per fathom, worth 9 dwys. of gold per ton. The end driving north, on this lode, is opening up very satisfactorily; the lode maintains in this direction its regalarity, giving 5½ tons of ore per fathom, worth 12 dwts. of gold per ton. The end driving north, in the 23, on No. 5 lode, yields 2 tons per fathom, worth 3 dwts. of gold per ton. A considerable change has taken piace in the ground in this end. faveurable for an increase of ore. The stopes in bottom of the 46, on No. 1 lode, south of cross-cut, yield 6 tons per fathom, worth 2 cos. of gold per ton. B. andary: The end south, in the 10, is poor. The wings sinking below the 19 yields 8 tons of ore per fathom.—Aquavite Mine: Adit level end driving south, on No. 2 lode, is poor. The 24 end is the same as last week, yielding 3 tons of ore per fathom.—Aquavite Mine: Adit level end driving south, on No. 2 lode, is poor. The 24 end is the same as last week, yielding 3 tons of ore per fathom.—Aquavite Mine: Adit level end driving south, in the 46, yields 6 tons per fathom, worth 1 oz. of gold per ton. The 3d end south continues the same as for some time past. The end driving south, in the 46, yields 6 tons per fathom, worth 1 oz. of gold per ton. The stopes maintain their former value.—Surface: We have completed the dicharge leat from the new water-course, and have commenced to erect stands support a part of the launders near the head of the water-course.—Val Toppi: The stopes at No. 3 level, not he side lode, are not looking so well, but there is good lode in the rise above the stopes. The lode looks well north and south of cross-cut in No. 2 level. In the end driving north on the side lode, in the rise above the stopes. The lode looks well north and south of cr spendid bunch of copper ore; this end we are oniged to spend or in consequence of working the stope above. The 4s, west from engine-shaft, has been extended during the past month 4ft, 5 in, through very hard quarra and granulated rock, with some spots of copper ore; this end we have alcompended, and have placed the men at the 2s to sink a winze through taking which will be to a great advantage of working the stope at the 2s. The 3s, on Job's branch, has been extended during the past month 1 fm. 4 ft, 7 in. The has been an improvement in this end during the past month, and we have had some groot stones of co.per ore from the place; re-set, June 3, to one man and some groot stones of co.per ore from the place; re-set, June 3, to one man and some groot stones of co.per ore from the 2s is still very good, yielding from 8 to 3 tons of copper ore per fathom. Extract of copper ore to the month, 5to tons of 2552 lbs.—Natabeep: The 17, from Pries' shaft, has been extended during the past month 2 lus. 4 ft, 3 in, through ground which has yielded some stones of copper ore, but not sufficient to notice; re-set, May 28, to two men and eight labourers, at 24l. per fathom for the month.—Springbok Fontein: The trial shaft has been sunk during the past month 2 ft. Springbok Fontein: The trial shaft has been sunk during the past month 3 fms, through groot ground without cutting anything to notice; re-set, June 4, to one man and two labourers, at 24l. per fathom, I fathom, or the month. The adit trial level, north from the old mine, has been extended during the past month 3 fms, through poor ground without cutting anything to notice; the past month 2 fms, through ore ground yielding from 1 to 2 at 18.

— Koperberg; The rise in the back of the adit level has been extended during the past month 2 fms. 2 ft. 3 in, through ore ground, yielding from 1 to 2 at 18. per fathom for the month.

— Koperberg; The rise in the back of the adit level has been extended during the past month 2 fms. 2 ft. 8 in, through ore ground, yielding from 1

[For remainder of Foreign Mines see to day's Journal.]

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